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Phe Lys Asn Leu Lys Thr Gly Lys Tyr Ala Arg Met Arg Gly Ala His 515 520 525 Thr Asn Asp Val Lys Gln Leu Thr Glu Ala Val Gln Lys Ile Thr Thr 530 535 540 Glu Ser Ile Val Ile Trp Gly Lys Thr Pro Lys Phe Lys Leu Pro Ile 545 550 555 560 Gln Lys Glu Thr Trp Glu Thr Trp Trp Thr Glu Tyr Trp Gln Ala Thr 565 570 575 Trp Ile Pro Glu Trp Glu Phe Val Asn Thr Pro Pro Leu Val Lys Leu 580 585 590 Trp Tyr Gln Leu Glu Lys Glu Pro Ile Val Gly Ala Glu Thr Phe Tyr 595 600 605 Val Asp Gly Ala Ala Asn Arg Glu Thr Lys Leu Gly Lys Ala Gly Tyr 610 615 620 Val Thr Asn Lys Gly Arg Gln Lys Val Val Pro Leu Thr Asn Thr Thr 625 630 635 640 Asn Gln Lys Thr Glu Leu Gln Ala Ile Tyr Leu Ala Leu Gln Asp Ser 645 650 655 Gly Leu Glu Val Asn Ile Val Thr Asp Ser Gln Tyr Ala Leu Gly Ile 660 665 670 Ile Gln Ala Gln Pro Asp Lys Ser Glu Ser Glu Leu Val Asn Gln Ile 675 680 685 Ile Glu Gln Leu Ile Lys Lys Glu Lys Val Tyr Leu Ala Trp Val Pro 690 695 700 Ala His Lys Gly Ile Gly Gly Asn Glu Gln Val Asp Lys Leu Val Ser 705 710 715 720 Ala Gly Ile Arg Lys Ile Leu Phe Leu Asp Gly Ile Asp Lys Ala Gln
725
730
735 Asp Glu His Glu Lys Tyr His Ser Asn Trp Arg Ala Met Ala Ser Asp 740 745 750

Page 18

Phe Asn Leu Pro Pro Val Val Ala Lys Glu Ile Val Ala Ser Cys Asp
755 760 765 Lys Cys Gln Leu Lys Gly Glu Ala Met His Gly Gln Val Asp Cys Ser 770 780 Pro Gly Ile Trp Gln Leu Asp Cys Thr His Leu Glu Gly Lys Val Ile 785 790 795 800 Leu Val Ala Val His Val Ala Ser Gly Tyr Ile Glu Ala Glu Val Ile 805 810 815 Pro Ala Glu Thr Gly Gln Glu Thr Ala Tyr Phe Leu Leu Lys Leu Ala 820 825 830 Gly Arg Trp Pro Val Lys Thr Ile His Thr Asp Asn Gly Ser Asn Phe 835 840 845 Thr Ser Ala Thr Val Lys Ala Ala Cys Trp Trp Ala Gly Ile Lys Gln 850 860 Glu Phe Gly Ile Pro Tyr Asn Pro Gln Ser Gln Gly Val Val Glu Ser 865 870 875 880 Met Asn Lys Glu Leu Lys Lys Ile Ile Gly Gln Val Arg Asp Gln Ala 885 890 895 Glu His Leu Lys Thr Ala Val Gln Met Ala Val Phe Ile His Asn Phe 900 905 910 Lys Arg Lys Gly Gly Ile Gly Gly Tyr Ser Ala Gly Glu Arg Ile Val 915 920 925 Asp Ile Ile Ala Thr Asp Ile Gln Thr Lys Glu Leu Gln Lys Gln Ile 930 935 940 Thr Lys Ile Gln Asn Phe Arg Val Tyr Tyr Arg Asp Ser Arg Asn Pro 945 950 955 960 Leu Trp Lys Gly Pro Ala Lys Leu Leu Trp Lys Gly Glu Gly Ala Val 965 970 975 Val Ile Gln Asp Asn Ser Asp Ile Lys Val Val Pro Arg Arg Lys Ala 980 985 990 Lys Ile Ile Arg Asp Tyr Gly Lys Gln Met Ala Gly Asp Asp Cys Val 995 1000 1005 Ala Ser Arg Gln Asp Glu Asp 1010 101

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Lys Ser Leu Val Lys His His Met Tyr Val Ser Gly Lys Ala Arg Gly 35 40 45

Trp Phe Tyr Arg His His Tyr Glu Ser Pro His Pro Arg Ile Ser Ser 50 60

Glu Val His Ile Pro Leu Gly Asp Ala Arg Leu Val Ile Thr Thr Tyr 65 70 75 80

Trp Gly Leu His Thr Gly Glu Arg Asp Trp His Leu Gly Gln Gly Val 85 90 95

Ser Ile Glu Trp Arg Lys Lys Arg Tyr Ser Thr Gln Val Asp Pro Glu 100 105 110

Leu Ala Asp Gln Leu Ile His Leu Tyr Tyr Phe Asp Cys Phe Ser Asp 115 120 125

Ser Ala Ile Arg Lys Ala Leu Leu Gly His Ile Val Ser Pro Arg Cys 130 135 140

Glu Tyr Gln Ala Gly His Asn Lys Val Gly Ser Leu Gln Tyr Leu Ala 145 150 155 160

Leu Ala Ala Leu Ile Thr Pro Lys Lys Ile Lys Pro Pro Leu Pro Ser 165 170 175

Val Thr Lys Leu Thr Glu Asp Arg Trp Asn Lys Pro Gln Lys Thr Lys Page 20

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Gly His Arg Gly Ser His Thr Met Asn Gly His 195 200

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T cell leukemia-lymphoma virus (HTLV)

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Met Ile Cys Ser Ala Thr Glu Lys Leu Trp Val Thr Val Tyr Tyr Gly
40 45

Val Pro Val Trp Lys Glu Ala Thr Thr Thr Leu Phe Cys Ala Ser Asp 50 60

Ala Lys Ala Tyr Asp Thr Glu Val His Asn Val Trp Ala Thr His Ala 65 70 75 80

Cys Val Pro Thr Asp Pro Asn Pro Gln Glu Val Val Leu Val Asn Val 85 90 95

Thr Glu Asn Phe Asn Met Trp Lys Asn Asp Met Val Glu Gln Met His 100 105 110

Glu Asp Ile Ile Ser Leu Trp Asp Gln Ser Leu Lys Pro Cys Val Lys 115 120 125

Leu Thr Pro Leu Cys Val Ser Leu Lys Cys Thr Asp Leu Lys Asn Asp 130 135 140

Thr Asn Thr Asn Ser Ser Ser Gly Arg Met Ile Met Glu Lys Gly Glu 145 150 155 160

Ile Lys Asn Cys Ser Phe Asn Ile Ser Thr Ser Ile Arg Gly Lys Val 165 170 175

Gln Lys Glu Tyr Ala Phe Phe Tyr Lys Leu Asp Ile Ile Pro Ile Asp 180 185 Asn Asp Thr Thr Ser Tyr Thr Leu Thr Ser Cys Asn Thr Ser Val Ile 195 200 205 Thr Gln Ala Cys Pro Lys Val Ser Phe Glu Pro Ile Pro Ile His Tyr 210 215 220 Cys Ala Pro Ala Gly Phe Ala Ile Leu Lys Cys Asn Asn Lys Thr Phe 225 230 235 240 Asn Gly Thr Gly Pro Cys Thr Asn Val Ser Thr Val Gln Cys Thr His 245 250 255 Gly Ile Arg Pro Val Val Ser Thr Gln Leu Leu Leu Asn Gly Ser Leu 260 265 270 Ala Glu Glu Val Val Ile Arg Ser Ala Asn Phe Thr Asp Asn Ala 275 280 285 Lys Thr Ile Ile Val Gln Leu Asn Gln Ser Val Glu Ile Asn Cys Thr 290 295 300 Arg Pro Asn Asn Asn Thr Arg Lys Ser Ile Arg Ile Gln Arg Gly Pro 305 310 315 320Gly Arg Ala Phe Val Thr Ile Gly Lys Ile Gly Asn Met Arg Gln Ala 325 330 335 His Cys Asn Ile Ser Arg Ala Lys Trp Asn Asn Thr Leu Lys Gln Ile 340 345 350Asp Ser Lys Leu Arg Glu Gln Phe Gly Asn Asn Lys Thr Ile Ile Phe 355 360 365 Lys Gln Ser Ser Gly Gly Asp Pro Glu Ile Val Thr His Ser Phe Asn 370 375 380 Cys Gly Glu Phe Phe Tyr Cys Asn Ser Thr Gln Leu Phe Asn Ser 385 390 395 Thr Trp Phe Asn Ser Thr Trp Ser Thr Lys Gly Ser Asn Asn Thr Glu 405 410 415Gly Ser Asp Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn 420 425 430 Page 22

Met Trp Gln Glu Val Gly Lys Ala Met Tyr Ala Pro Pro Ile Ser Gly 445 Gln Ile Arg Cys Ser Ser Asn Ile Thr Gly Leu Leu Leu Thr Arg Asp 450 460 Gly Gly Asn Ser Asn Asn Glu Ser Glu Ile Phe Arg Pro Gly Gly Gly 465 470 475 480 Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val 485 490 495 Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Lys Ala Lys Arg Arg Val 500 505 510 Val Gln Arg Glu Lys Arg Ala Val Gly Ile Gly Ala Leu Phe Leu Gly 515 525 Phe Leu Gly Ala Ala Gly Ser Thr Met Gly Ala Ala Ser Met Thr Leu 530 540 Thr Val Gln Ala Arg Gln Leu Leu Ser Gly Ile Val Gln Gln Gln Asn 545 550 550 560 Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His Leu Leu Gln Leu Thr 565 570 575 Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile Leu Ala Val Glu Arg 580 585 590 Tyr Leu Lys Asp Gln Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys 595 600 605 Leu Ile Cys Thr Thr Ala Val Pro Trp Asn Ala Ser Trp Ser Asn Lys 610 620 Ser Leu Glu Gln Ile Trp Asn Asn Met Thr Trp Met Glu Trp Asp Arg 625 630 635 640 Glu Ile Asn Asn Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser 645 650 655 Gln Asn Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys 660 665 670 Trp Ala Ser Leu Trp Asn Trp Phe Asn Ile Thr Asn Trp Leu Trp Tyr Page 23

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Ile Lys Leu Phe Ile Met Ile Val Gly Gly Leu Val Gly Leu Arg Ile 690 695 700 Val Phe Ala Val Leu Ser Val Val Asn Arg Val Arg Gln Gly Tyr Ser 705 710 715 720 Pro Leu Ser Phe Gln Thr His Leu Pro Ile Pro Arg Gly Pro Asp Arg 725 730 735 Pro Glu Gly Ile Glu Glu Glu Gly Gly Glu Arg Asp Arg Asp Arg Ser Ile Arg Leu Val Asn Gly Ser Leu Ala Leu Ile Trp Asp Asp Leu Arg 755 760 765 Ser Leu Cys Leu Phe Ser Tyr His Arg Leu Arg Asp Leu Leu Leu Ile 770 775 780 Val Thr Arg Ile Val Glu Leu Leu Gly Arg Arg Gly Trp Glu Ala Leu 785 790 795 800 Lys Tyr Trp Trp Asn Leu Leu Gln Tyr Trp Ser Gln Glu Leu Lys Asn 805 810 815 Ser Ala Val Ser Leu Leu Asn Ala Thr Ala Ile Ala Val Ala Glu Gly 820 825 830 Thr Asp Arg Val Ile Glu Val Val Gln Gly Ala Tyr Arg Ala Ile Arg 835 840 845 His Ile Pro Arg Arg Ile Arg Gln Gly Leu Glu Arg Ile Leu Leu 850 855 860